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Measuring the Internationalisation Readiness of Firms

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Measuring the Internationalisation Readiness of Firms

Abstract:

Although the internationalisation process of the firm has been well-researched since the 1970s, the behaviour of firms prior to internationalisation has not received commensurate research attention. This paper argues that a focus on firms' pre-internationalisation activities will not only offer an additional important perspective to the study of firm internationalisation but it will also address a significant research gap in studies that are theoretically based on the so-called stages models. During the pre-internationalisation phase, a firm is exposed to stimuli factors that may trigger an impulse for foreign market expansion. Decision makers' perceptions of stimuli, their attitudinal commitment towards internationalisation, the firms' resources and capabilities, as well as the moderating effect of lateral rigidity comprise a learning process that leads a firm towards readiness to initiate an internationalisation decision. This paper advances the concept of internationalisation readiness and proposes a method for developing an Internationalisation Readiness Index.

Key Words: Internationalisation readiness, pre-internationalisation, internal stimuli, external stimuli, attitudinal commitment, firm resources, lateral rigidity.

1. Introduction

Research into the internationalisation of firms has progressed since the 1970s, with the process of internationalisation being one predominant area that has attracted considerable early research interest (Johanson & Vahlne, 1977; Johanson & Wiedersheim-Paul, 1975; Bilkey & Tesar, 1977; Cavusgil, 1980). However, it has been noted that this research area is still in need of further development (Luostarinen & Welch, 1990; Lamb & Liesch, 2002) with notably a lack of studies that focus on firm activities and development prior to the commencement of international operations. The sequential nature of the internationalisation process makes this a critical phase to examine as subsequent international development is based on the foundations laid at pre-internationalisation (Wiedersheim-Paul, Welch & Olson, 1975). Wiedersheim-Paul et al. (1975) first highlighted the importance of studying the firm's pre-internationalisation behaviour and while attempting to develop a pre-export model, their study essentially became an exploratory review. Caughey and Chetty (1994) in their case study research on New Zealand firms applied the Wiedersheim-Paul et al. (1975) embryonic model but there has thus far been no other reported research that attempts to expand on this early literature. Pre-internationalisation behaviour has also been described in the earlier stages of the innovation model (Bilkey & Tesar, 1977) but subsequent studies have not expanded on this theme. The significance of this research gap is intriguing, and despite various viewpoints addressing the internationalisation of firms, it remains unclear as to how and why this process originates.

Notwithstanding criticisms that the Uppsala Model is too simplistic in having only a single construct (experiential knowledge) to explain internationalisation (Blomstermo & Sharma, 2003) and for being overly deterministic (Reid, 1983; Turnbull, 1987), its significance to firm internationalisation research cannot be denied, especially given the empirical support for the model in studies that focus on the early stages of internationalisation (Melin, 1992). An extension of the model to include the pre-internationalisation phase promises major benefits for firms in understanding their capabilities and also for public policy agencies dedicated to the encouragement of the internationalisation of firms from their constitutiencies. Recently, these improvements have been called for by the original Uppsala researchers (Johanson & Vahlne, 2003). Additionally, this complements the earlier stages of the export development process highlighted in the innovation model and supports the traditional behavioural perspective that views internationalisation as a gradual learning process (Johanson & Vahlne, 1977; Bilkey & Tesar, 1977).

This paper argues the significance of adopting a pre-internationalisation perspective. Focusing on exporting as the foreign market entry mode, the first section of this paper presents an overview of relevant constructs and proposes a pre-internationalisation phase model to complement the Uppsala theoretical framework. The concept of internationalisation readiness is introduced as the point of decision assessment that links a firm's pre-internationalisation phase with its initial international commitment. In the following section, a method is proposed for the development of an Internationalisation Readiness Index (IRI). The paper concludes by examining the practical implications of such an index.

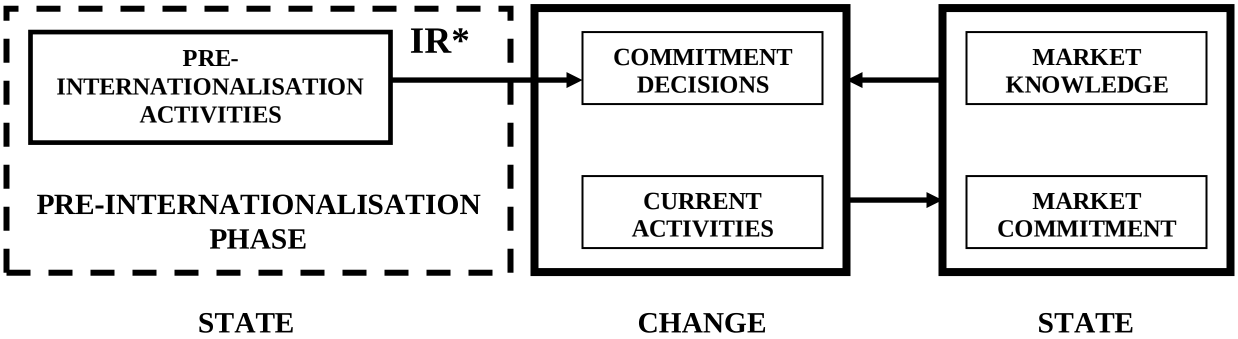
2. The pre-internationalisation phase: a review of relevant constructs

Studies based on the behavioural perspective have made important contributions to the field of organisation research generally. This framework underpinned by the early scholarly works of Penrose (1959) and Cyert and March (1963) places emphasis on a firm's development through learning, resource allocation and decision-making. Penrose's (1959) notion of experiential knowledge is an essential feature of internationalisation research, especially the traditional stages theories that include the Uppsala Model and the innovation model that build on an assumption that firms internationalise in stages through a process of incremental decisions and commitment. The behavioural-based literature on firm internationalisation highlights the role of gradual experiential learning in a firm's foreign commitment decisions (Cavusgil, 1980; Luostarinen, 1980). The stages theories, most notably, describe increasing foreign involvement as being the result of interplay between knowledge acquisition and market commitment (Johanson & Wiedersheim-Paul, 1975; Johanson & Vahlne, 1977; Reid, 1981) where the lack of knowledge is perceived as a risk factor and this uncertainty is "reduced through incremental decision-making and learning about foreign markets and operations" (Johanson & Wiedersheim-Paul, 1975: 306).

The innovation model describes internationalisation as an evolution of a firm through distinct learning stages of increasing foreign commitment, with the firm being initially disinterested but becoming engaged as an 'experimental' exporter, developing over time into an 'active' exporter, and at a later stage into a 'committed' exporter (Cavusgil, 1980). The Uppsala Model highlights internationalisation as an incremental process with the firm passing through a progressive development of transitions between state aspects (knowledge about foreign markets and resource commitment) and change aspects (decisions to commit resources and the performance of current business activities) via the accumulation of experiential knowledge. Further underlying the Uppsala Model is the claim that internationalisation is affected by the compatibility between a firm's experiential knowledge and its resource capabilities, as well as the perceived psychic distance of the potential foreign market (Johanson & Vahlne, 2003). The greater the psychic distance (factors inhibiting the flow of information from market to firm), the less likely that country will be selected as a target market.

The theoretical frameworks in both of these traditional stages theories conjecture that foreign market commitment is positively correlated with the accumulation of experiential knowledge. However, one crucial issue that both models have not attempted to explain is: when does this process begin? The cyclical state-to-change aspect transition in the Uppsala Model, for example, represents a firm's increasing foreign involvement but does not attempt to identify a starting point for the process. As Welch (1977) argued, in order to understand how an internationalisation orientation originated within the firm, we need to track back to examine the decision-making process that is responsible for establishing international commitments. This accentuates the need for exploring a firm's pre-internationalisation phase where this learning process commences. The pre-internationalisation phase occurs prior to the representation captured in the Uppsala framework and can be established as a state that all firms experience before their initial commitment to a foreign market (refer to Figure 1). This phase is reflected in the innovation model as the earlier stages of the export development process, where a non-exporting firm becomes aware of opportunities which stimulates an interest and intention that leads the firm towards its initial involvement in exporting (Reid, 1981). The following constructs are identified in the literature as being important to the commencement of a firm's internationalisation.

Figure 1: Positioning the Pre-Internationalisation Phase

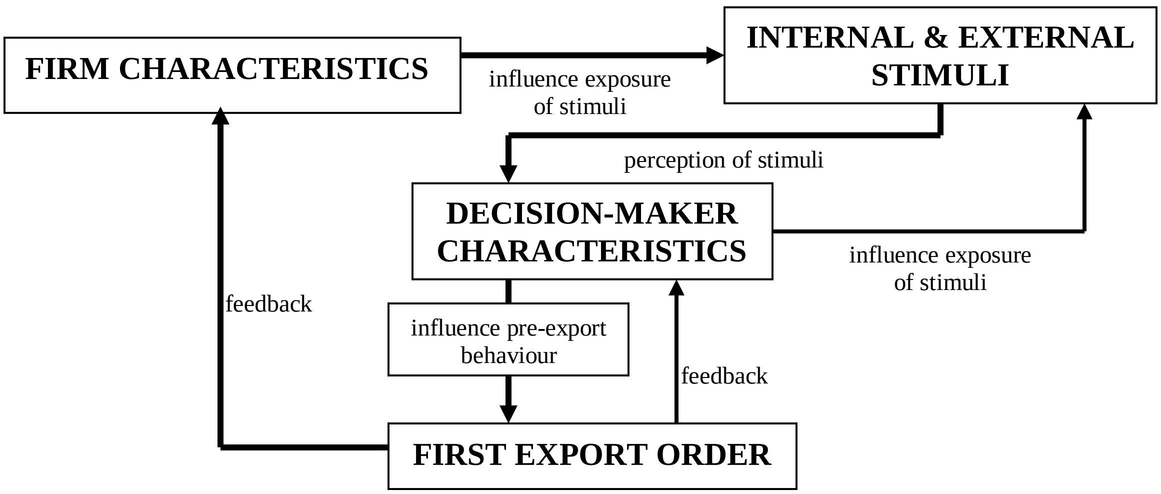


* IR denotes internationalisation readiness

2.1. Internal and external stimuli

That internationalisation is a complex process of organisational learning through the acquisition of appropriate knowledge is supported in the literature (Andersen, 1993; Lord & Ranft, 2000), with the prerequisite to this learning process being a decision-maker's exposure to and recognition of relevant information (Dretske, 1981). Central to a firm's internationalisation decision is the role of stimuli factors which provide the information input that drive a firm's international expansion by acting as the "motives, incentives, triggering cues or attention evokers" (Leonidou, 1998:43). Wiedersheim-Paul et al.'s (1975) pre-export model highlighted stimuli factors as key export commencement determinants (Figure 2) and this has been extensively supported in studies (Bilkey 1978; Aaby & Slater, 1989; Caughey & Chetty, 1994; Evangelista, 1994). These stimuli are crucial for a firm's initial involvement and subsequent development (Bilkey, 1978; Dichtl, Leibold, Koglmayr & Muller, 1984; Leonidou, 1995; Morgan & Katsikeas, 1997) triggering the learning process by alerting the decision-maker to possible opportunities that are presented to the firm through an international venture. Although exposure to stimuli factors is insufficient for a firm's immediate internationalisation, it is nonetheless an essential condition for its future foreign market engagement (Dichtl, Leibold, Koglmayr & Muller, 1983).

Figure 2: Simplified Pre-Export Model (Wiedersheim Paul et al., 1975)



The importance of internal stimuli to export has been widely discussed, and often, these stimuli are generated from experiences in doing business domestically. Vernon (1966) long ago observed that the nature of a product in terms of its uniqueness has an impact on whether the product is exported. Potential opportunities presented by the characteristics of a firm and its management (Wiedersheim-Paul et al, 1975; Welch, 1977; Bilkey & Tesar, 1977 Oviatt & McDougall, 1994), the presence of interested managers with the appropriate firm and market experience (Johanson & Vahlne, 1977; Cavusgil, 1984) and network memberships (Håkansson, 1982) can also stimulate a firm to consider internationalisation. Other influential internal stimuli include the desire by decision-makers to achieve corporate goals, proactive risk control to deal with stagnation and decline, and higher competitiveness in the marketplace (Valos & Baker, 1996; Leonidou, 1998).

External demand and its impact on scale economies and relative factor costs have been highlighted as important external stimuli by Vernon (1966) and Vernon and Wells (1986). External stimuli can also be introduced through government support or competitive pressures in the domestic market (Leonidou, 1998). Other external stimuli include the placement of unsolicited orders or inquiries and contacts from foreign customers after trade fairs (Bilkey & Tesar, 1977; Cavusgil, 1980) and information gained through domestic and foreign partners (Sharma & Johanson, 1987; Johanson & Mattsson, 1988). The recent literature on born global firms argues that the imperative for internationalisation has become intense due to the stimulating impact of globalisation forces, higher levels of competition, liberalisation of trade and advances in technology (McDougall & Oviatt, 2000; Chetty & Campbell-Hunt, 2004). Globalisation forces act as an external stimulus by creating opportunities through the promotion of cultural homogeneity and social change (Ohmae, 1994) and by lowering the hurdle to internationalisation through transaction lubricating processes (Liesch and Knight, 1999).

According to Wiedersheim-Paul et al. (1975), whether decision-makers perceive relevant stimuli or not will influence a firm's initial foreign market commitment. The exposure to stimuli and the influence on decision-makers can be seen as an organisational learning process involving the internalisation of appropriate information perceived, complementing the Uppsala model's argument that an ongoing learning process leads to a growth in experiential knowledge and incremental foreign commitment (Johanson & Vahlne, 1977; Andersen, 1993; Lord & Ranft, 2000). Liesch and Knight (1999: 385) have argued that a "common thread in (internationalisation theories) is the importance of acquiring beneficial information and knowledge to support foreign expansion". The categorisation of internal and external stimuli in Leonidou (1998) provides a useful reference point for this study, and this is summarised in Table 5.

Table 1: Internal and External Stimuli Categorised (Leonidou, 1998)

INTERNAL STIMULI	**PROACTIVE**	Achievements of economies of scale
		Special managerial interest/urge/aspirations
		Products with unique qualities
		Possession of a special competitive advantage
		Potential for extra sales/profits
		Need to achieve corporate growth
	REACTIVE	Offsetting sales of a seasonal product
		Utilisation of idle operating capacity
		Stagnation/decline in domestic sales/profits
		Reducing dependence on/risk of domestic business
EXTERNAL STIMULI	**PROACTIVE**	Encouragement by external agents/organizations
		Identification of attractive foreign opportunities
		Exclusive information on foreign markets
		Government export assistance/incentives
		Contacts after participating in trade fairs/missions
	REACTIVE	Initiation of exports by domestic competitors
		Competitive pressures in the domestic market
		Favourable foreign exchange rates
		Saturation/shrinkage of domestic market
		Receipt of unsolicited orders from abroad
OTHER MISCELLANOUS STIMULI		

Both internal and external stimuli provide the key information input to firms on which decisions to expand internationally can be made (Olson & Wiedersheim-Paul, 1978; Caughey & Chetty, 1994). Through exposure to stimuli, an impulse is triggered, and whether a subsequent decision to internationalise is made or not depends on whether the appropriate information presented by the impulse can be internalised by the firm into useable knowledge for an internationalisation decision (Knight & Liesch, 2002). Knowledge can be effectively utilised once a firm is aware that it is in possession of the knowledge, can make sense of it, and apply it freely for the firm's benefit (Lim & Klobas, 2000). When information has been sufficiently acquired and translated into usable knowledge, a firm becomes internationalisation ready (Knight and Liesch, 2002).

2.2. Attitudinal/psychological commitment

The Uppsala Model identifies commitment as important both within a state aspect and also a change aspect (Johanson & Vahlne, 1977), and while commitment has often been viewed in relation to resources, this definition of commitment is limited and does not address the multi-dimensional nature of this construct (Lamb & Liesch, 2002). Commitment also denotes a psychological and attitudinal stake associated with motivation and involvement (Mowday, Porter & Steers, 1982; Gundlach, Achrol & Mentzer, 1995). Nieminen and Tornross (1997) described this as commitment on an individual level that relates to a decision-maker's dedication to accept change and new methods, which is differentiated from commitment on an organisational level that relates to a firm's investment of resources. Other research has established attitude as an essential influence towards a firm's internationalisation (Calof & Beamish, 1995).

When information presented as stimuli factors is exposed to a firm, the impulse triggered may or may not lead to further involvement but may instil in the decision-maker some form of attitudinal or psychological commitment such that it compels attention to be shifted towards foreign opportunities (Aharoni, 1966). Reid (1981) highlighted this as an occurrence in the firm's early decision-making stage after the decision-maker becomes aware of possible problems or opportunities faced by the firm that require it to initiate a strategy for involvement in a foreign market. At this stage, the decision-maker exhibits behavioural attributes such as expectation, belief and attitude towards internationalisation and foreign potential markets (McGuinness, 1978). Psychological and attitudinal commitments create interest and encourage the decision-maker to seek further information or to evaluate alternatives regarding future firm strategies. Resource commitment is initiated only when the decision-maker feels that the firm has the propensity to venture into a foreign market. Following the Uppsala model, a change aspect occurs through a desire to commit resources by the decision-maker on the basis of perception of problems and opportunities in a market abroad (Blomstermo & Sharma, 2003).

2.3. Firm resources

The Wiedersheim-Paul et al. (1975) framework suggests that a firm's readiness to commit to a foreign market is also affected by its resource attributes. The behavioural perspective identifies a firm's resource attributes as an essential link in its learning process, with emphasis placed on the role of the decision-maker and firm characteristics in explaining experience and knowledge accumulation. This emphasis on a firm's resources is complementary to the Uppsala model's state aspects where market commitment and market knowledge are highlighted as the major elements. It is also consistent with the resource-based view that highlights a firm's bundle of resources as being essential to its long-term sustainable competitive advantage (Wernerfelt, 1984; Andersen & Kheam, 1998) and the proposition that internationalisation is a strategic approach of consistent development and allocation of resources (Melin, 1992). The strategic management literature defines resources in a broad range, highlighting both tangible and intangible aspects related to a firm's financial, human-related, physical, as well as technological attributes (Hitt, Ireland & Hoskisson, 1999). From a pre-internationalisation perspective, resources are firm-specific factors on the basis of which market commitment is initiated (Wiedersheim-Paul et al, 1975; Olson & Wiedersheim-Paul, 1978).

Hence, the decision-maker's ability to make an internationalisation decision is influenced by the nature of the firm's intangible and tangible resources relating to its attitudinal and orientation attributes (Aaby & Slater, 1989; Louter, Ouwerkerk & Bakker, 1991; Axinn, 1988Bilkey, 1978), human-related aspects such as skills (Axinn, 1988; Hardy, 1987; Louter et al, 1991) and knowledge (Bilkey, 1978; Christensen, da Rocha & Gertner, 1987), product nature and quality (Khalili, 1991; Louter, Ouwerkerk & Bakker, 1991), research and development (Reid, 1991), financial resources (Bilkey, 1978), and technology level (Aaby & Slater, 1988; Rodríguez & Rodríguez, 2005). A firm's resources strength presents a strong influence on the decision-maker's foreign commitment decision.

2.4. Lateral rigidity

An organisation can be viewed as a system whereby information is processed and decisions are rendered (Cyert & March, 1963). The antecedent to decision-making in a firm relies upon its understanding of how information is secured, communicated and used in the process. Although a learning process is inherent in all firms, an essential issue to consider here is that not all firms that have been subjected to information through stimuli factors ultimately make use of the information presented in an effective manner to commence internationalisation. Studies have shown stimuli alone to be insufficient as a guarantee for a firm's engagement with a foreign market (Olson & Wiedersheim-Paul, 1978; Dichtl et al, 1984). A moderating force seems to be present between the process of stimuli exposure and information internalisation where a firm's resource factors either accept or reject the perceived impulses. Luostarinen

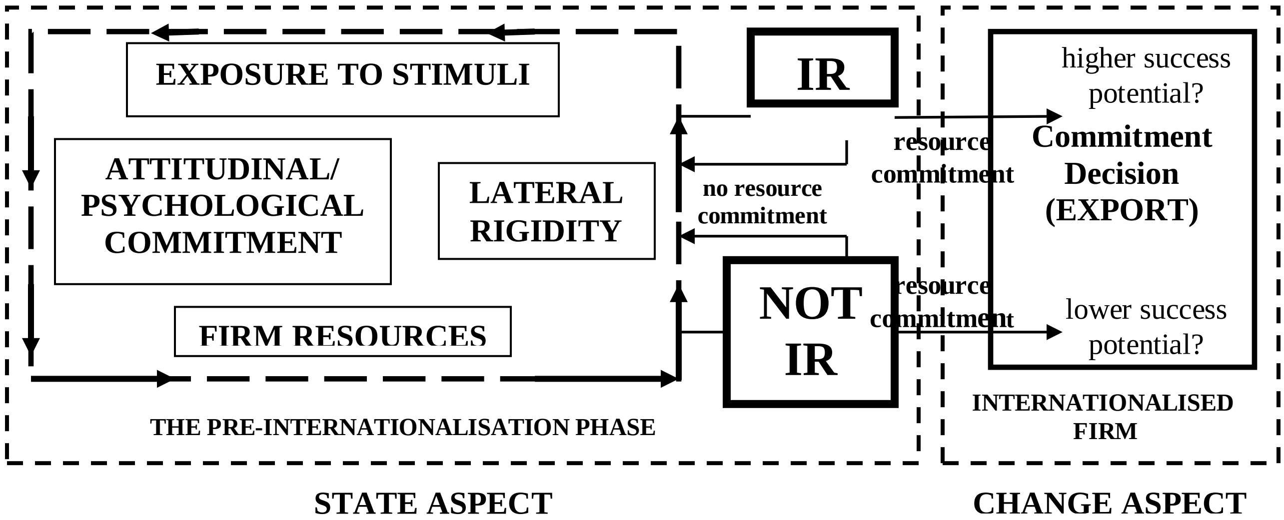
(1979) described this force as a form of lateral rigidity, a typical feature at every stage of a decision-making process, which is the result of a firm's behavioural characteristics that cause inelasticity in its decision-making behaviour. Lateral rigidity refers to a limited perception of stimuli factors, a biased search that results in limited information, or a confinement of choices due to uncertainty and risk avoidance (Luostarinen, 1979). Lateral rigidity assists in a better understanding of the unpredictable actions firm take in their internationalisation decisions. The inclusion of lateral rigidity provides a more complete explanation as to why a firm that has been subject to information may or may not make use of such information, why the internationalisation process does not necessarily go smoothly, and why an exposure to stimuli impulses may not be a sufficient condition for the firm to become engaged in an international commitment.

3. A pre-internationalisation model developed to complement the Uppsala framework

As reviewed above, the literature has sufficiently established the pre-internationalisation phase as a learning stage experienced by all firms' prior to internationalisation. A firm's exposure to internal and external stimuli starts the learning process by triggering an impulse. Whether information created by this impulse can be internalised by the firm will be dependent upon how it is being perceived by the decision-maker in view of the firm's bundle of resources, the decision-maker's attitudinal and psychological commitment, as well as the effect of lateral rigidity. Information that is internalised by the firm becomes part of its knowledge resource. This accumulation of experiential knowledge will in turn present an impact on the recursive cycle of stimuli exposure and commitment, raising the firm's level of internationalisation readiness.

Internationalisation readiness is a concept that describes a firm's potential transition from a purely domestic firm into an international firm. This concept represents a firm's readiness to undertake export activities overseas. The point of analysis for readiness is based on the learning process in the pre-internationalisation phase that includes an information input (through stimuli factors) that induces motivation and action (through attitudinal and psychological commitment), which is influenced by the firm's resources (firm and decision-maker attributes) and moderated by preventive factors (lateral rigidity). When the firm initiates its first export decision, it exits the pre-internationalisation phase and enters the internationalisation process as described by the Uppsala Model as a state to change aspect transition. If it decides not to export, it remains within the pre-internationalisation phase where the learning process continues. This is illustrated through the conceptual pre-internationalisation model of Figure 3. It should be noted that the concept of internationalisation readiness is relevant for all firms, traditional and born global, for example. In this aspect, born global firms that internationalise very quickly do not differ from traditional firms that take a gradual approach to internationalisation as they similarly experience the features of a learning process through their pre-internationalisation phase. The substantive difference is that for these born global firms, a readiness level is achieved at a much faster pace than traditional firms and their learning process is much shorter because of the truncated time they take to internationalise after inception.

Figure 3: A Reframed Uppsala-Based Pre-Internationalisation Model



4. Measuring internationalisation readiness

Internationalisation readiness describes a firm's preparedness and propensity to commence internationalisation. As highlighted in the previous section, this is determined by the firm's development and learning in its pre-internationalisation phase. This section proposes an approach to measure the internationalisation readiness latent construct.

4.1. Assessment of the relationship between latent construct and indicators

Studies utilising multi-item measures have generated significant interest and advancement in guidelines for measure development and methodological soundness (Bruner & Hensel, 1993; 1996). The nature of causality between a latent construct and observed indicators is an essential point of initial assessment (Bollen & Lennox, 1991; MacCallum & Browne, 1993). First, the observed indicators can be viewed as being dependent on a latent construct, exhibiting a 'reflective' relationship (refer to Figure 4a) described as:

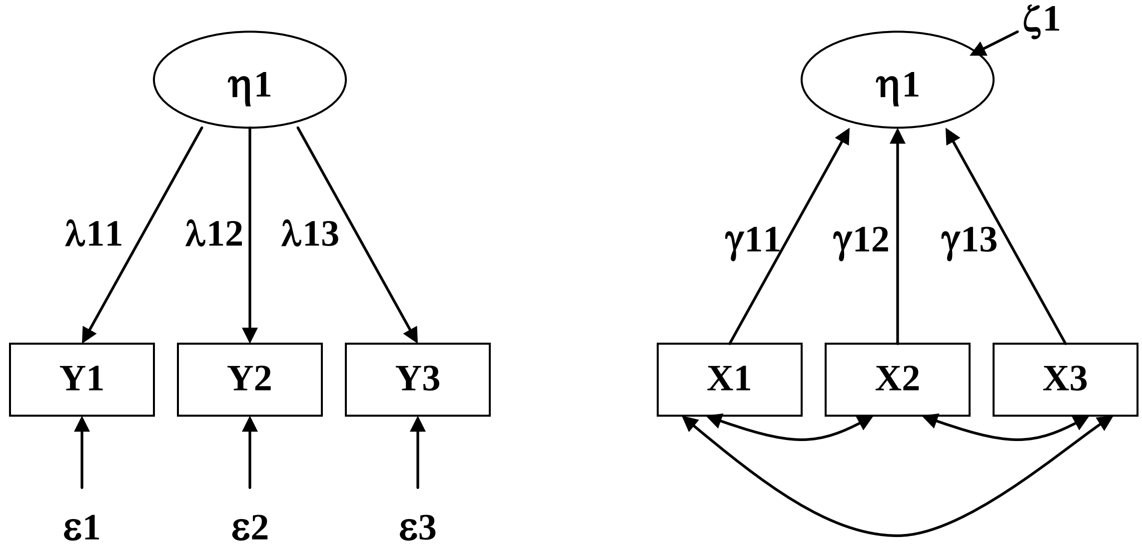
$$\gamma i = 8i1\eta1 + i$$

where γ_i is the *i*th observed indicator, η_1 is the latent construct, *I,* is the measurement error of the *i* indicator, and 8_{i1} is the coefficient providing the effect of η_1 on γ_i (Bollen & Lennox, 1991: 305). Alternatively, observed indicators can act as a composite explanation for a latent construct, highlighting a formative relationship (refer to Figure 4b) described as:

$$\eta = \gamma_1\chi_1 + \gamma_2\chi_2 + \ldots + \gamma_n\chi_n + \zeta$$

where η is the latent construct, γ is the parameter reflecting the contribution of observed indicator χ to the latent construct, and ζ represents the disturbance term (Diamantopoulos & Winklhofer, 2001: 270).

Figure 4: Reflective vs. Formative Model



a) REFLECTIVE MODEL **b) FORMATIVE MODEL**

Source: Models are adapted from Bollen and Lennox (1991) and Diamantopoulos and Winklhofer (2001)

Whether a reflective or formative relationship exists between observed indicators and a latent construct will determine whether a scale-type measure or an index-type measure is appropriate (Netemeyer, Bearden & Sharma, 2003). A scale is used in reflective relationships where the observed indicators are considered to be the effect of an underlying latent construct (Loehlin, 1998), whereas the relationship is formative rather than reflective when an index is developed to measure how the observed indicators determine the level of a latent construct by generating a composite score (DeVillis, 2003).

4.2. Internationalisation readiness: scale vs. index assessment

In this study, it has been noted that the observed indicators (internal and external stimuli, attitudinal/psychological commitment, lateral rigidity and firm resources) have a causal rather than reflective relationship on the latent construct (internationalisation readiness). The literature, as reviewed in the previous section, has not established a reflective relationship between the indicators and the concept of internationalisation readiness. The latent construct of internationalisation readiness does not describe the properties of each individual observed indicator. On the contrary, a formative relationship can be identified as the latent construct is caused by a combined influence from the observed indicators. This situation corresponds to the formative relationship specified in the formula, $\eta = \gamma 1\chi 1 + \gamma 2\chi 2 + \ldots + \gamma n\chi n + \zeta$. It is to be noted that each observed indicator by itself does not sufficiently provide an explanation for internationalisation readiness but only becomes meaningful in conjunction with the other indicators. An additional guideline to determine whether a formative or reflective relationship exists is be through an assessment of whether a change in the latent construct will result in similar changes in the observed indicators (Gray & Meister, 2004). In this case, a higher level of internationalisation readiness does not necessarily increase the value of each of the observed indicators. Hence, this assessment justifies the use of an index rather than a scale for internationalisation readiness.

4.3. A brief review of commonly cited indexes

Indexes are composite measures created when individual indicators are compiled according to an underlying model often for measuring multi-dimensional concepts (Nardo, Saisana, Saltelli, Tarantola, Hoffman & Giovanni, 2005). They are widely applied in the field of economics although it has been noted that the methodological literature relating to index construction is rare in comparison to that of scale development (Diamantopoulos & Winklhofer, 2001). To identify suitable criteria for the development of an Internationalisation Readiness Index (IRI), commonly cited indexes like the Consumer Price Index (CPI), the Economist's Big Mac Index, the United Nation Development Programme's (UNDP) Human Development Index, and the Kearney/Foreign Policy (KFP) Globalisation Index will be reviewed now.

The CPI and the Big Mac Index are primarily used for benchmarking purposes, while the HDI and the Globalisation Index are each used for measuring the degree of a defined phenomenon. The CPI is the most commonly used benchmarking index that measures the proportionate or percentage change in a set of prices over time (ILO, IMF, OECD, UNECE, Eurostat & World Bank, 2004; Afriat, 2005). The basis for constructing the CPI is a weighted average price of a basket of consumer goods and services assigned to a reference period commonly termed the base year, with a fixed weight assigned to each item in the basket proportional to its relative importance in consumer spending determined through surveys (Samuelson & Nordhaus, 1998). The Big Mac Index developed by The Economist magazine measures the theoretical exchange rates between two currencies (The Economist, 2001) and is an adaptation of the theory of purchasing power parity (Madura, 1998). This index is calculated by relating the cost of a Big Mac in one country to that of another (according to their respective currencies) to determine whether a currency is under-valued or over-valued (The Economist, 2001).

The Human Development Index (HDI) is a summary measure used for assessment of achievement in a country according to three dimensions: life expectancy, knowledge/education, and GDP/standard of living (Ivanova, Arcelus & Srinivasan, 1999). Each dimension is measured as an individual index calculated by a panel normalisation process:

$$\text{Dimension index} = \frac{\text{actual value} - \text{minimum value}}{\text{maximum value} - \text{minimum value}}$$

A weight is assigned for each dimension index, and the HDI calculated by a weighted-sum average of the three dimension indexes to achieve a final score (UNDP, 1996) for each country. The Kearney/Foreign Policy (KFP) Globalisation Index analyses the level of globalisation for individual countries. Similar to the HDI, the Globalisation Index is calculated by a weighted-sum average of pre-established dimensions: economic integration, personal contact, technological connectivity and political engagement (Foreign Policy, 2001; 2004). First, relevant variables for the dimension are identified, with the resulting quantitative value normalised. The Globalisation Index for each country is finalised by summing the variables, with weights arbitrarily assigned (Lockwood, 2001).

5. Construction of an internationalisation readiness index

Although each of the above indexes measures a different economic phenomenon, some similarities can be noted in terms of their construction procedures. Four key steps are noted in particular. Identifying the individual indicators that are relevant to the specification of a particular index is essentially the first step. Next, quantitative data need to be gathered for each indicator. Because items of different dimensions are being measured, the subsequent step involves a procedure of normalisation that is required for adjusting the data value for each indicator and standardising them numerically to allow for meaningful interpretation. Finally, each indicator must be assigned weights according to their degree of importance to the concept being investigated before being summed to a composite value. It can be observed that single dimension measures like the CPI and the Big Mac Index are less complex in comparison with the HDI and the Globalisation Index, which attempt to address problems of a multi-dimensional nature. As the Internationalisation Readiness Index (IRI) aims to measure the propensity and ability of a firm to commence export operations through a composite analysis of the four identified indicators, stimuli factors, attitudinal/psychological commitment, lateral rigidity and firm resources, the methods used in the development of the HDI and the Globalisation Index are most appropriate here.

The first step in the development of the IRI will require judgement be made on the formative indicators that explain the internationalisation readiness latent construct. To ensure that these indicators present a valid measure of the latent construct, the guidelines proposed by Diamantopoulos and Winklhofer (2001) need to be observed. According to these authors, guidelines for constructing indexes based on formative indicators are rare, but four issues have been identified through a review of literature that are considered crucial to successful index construction: content specification, indicator specification, indicator collinearity and external validity. Content and indicator specifications are important due to the abstract and ambiguous nature of latent constructs in formative models (Bagozzi & Heatherton, 1994) as well as the need to address the full scope of such constructs (Jarvis, Mackenzie & Podsakoff, 2003), the failure of which may result in the deficiency of a measure due to the omission of part of the formative model (Churchill, 1979).

The criteria of content specification and indicator specification can be established through an extensive literature review supported by case study research. The condition of indicator collinearity means that multicollinearity among the variables will have to be examined to ensure that all are within the appropriate cut-off threshold for inclusion in the index (Diamantopoulos & Winklhofer, 2001). Unlike the case of reflective models, evaluating the adequacy of measures in formative models through internal consistency reliability has been judged inappropriate (Bollen & Lennox, 1991). For formative indicators, external validity should be determined by paying attention to nomological or criterion-related validity (Jarvis, Mackenzie & Podsakoff, 2003), possibly through a correlation with relevant variables that are external to the index (Diamantopoulos & Winklhofer, 2001).

Having a strong theoretical framework that provides a clear definition of the latent construct is important in identifying relevant indicators to include in the index. This paper has so far established through literature review that the latent construct (internationalisation readiness) can be explained through a combination of causal indicators grouped under four dimensions (stimuli factors, attitudinal/psychological commitment, lateral rigidity and firm resources). To ensure content and indicator validity, supporting case studies should be conducted with a small sample of firms. Participants in the case studies can be asked questions that relate to their firms' experiences during the early stage of internationalisation. Data gathered through these case studies can then be analysed to ensure that the theoretical framework is sufficiently robust and the formative indicators are appropriately identified and defined. After establishing the theoretical framework and defining the causal indicators, the next stage in the development of the IRI will require the collection of quantitative data. This can be done through a questionnaire survey where sample firms are required to respond to questions that relate to the key dimensions, stimuli, attitudinal/psychological commitment, lateral rigidity and firm resources. Also required at this stage is the setting of scaling procedures for each indicator. Scaling procedures need to take into account the information required from each indicator as well as how each indicator impacts on the overall index.

As each causal indicator within the theoretical model measures a different dimension and is calculated in different measurement units, a normalisation procedure is required prior to data aggregation to avoid problems that may arise due to mixing different measurement units (Freudenberg, 2003). The panel normalisation (or re-scaling) technique used in the Globalisation Index as discussed earlier is suitable for the IRI. Normalisation will adjust any differences between the dimensions into the same range of 0 to 1. However, problems associated with the re-scaling method should be noted. These are, the possible widening of a range of indicators lying within a small interval that leads to an increased effect on the composite indicator; and the possible distortion of the normalised indicator due to extreme values or outliers (Nardo et al., 2005). An inspection of data prior to normalising individual indicators will identify cases of small interval and extreme outliers. If the re-scaling method is inappropriate, a standardisation (z-scores) method can be used that normalises individual indicators to a mean of 0 and a standard deviation of 1 using the formula:

normalised value = actual value - mean value / standard deviation

Before a composite value can be derived from the IRI, weights need to be assigned in accordance with the significance of each indicator. The weighting system used in the HDI and the Globalisation Index have been widely critiqued in the literature, the HDI for being simplistic in using the same weights for all dimensions (Palazzi & Lauri, 1998), and the Globalisation Index for being arbitrary (Lockwood, 2001). A good weighting system should complement the underlying theoretical framework and take into account the relative importance of each indicator to the latent construct. The common problems in assigning weights are, the presumption that all indicators have equal importance, which is usually not the case; and the failure to note correlations between indicators such that certain aspects become double-weighted (Freudenberg, 2003). As a guideline, statistical correlations between indicators should be tested. For example, when the correlation between two indicators is high, lower weights should be assigned, as it is likely that common factors are being shared (Nardo et al., 2005). Weightings can also be determined statistically through the use of factor analysis with factor loadings showing the importance of the variables according to the factor dimensions which measures correlation between a latent construct and individual indicators (Zikmund, 2003). Factor loadings can be used as weights for individual indicators within the IRI.

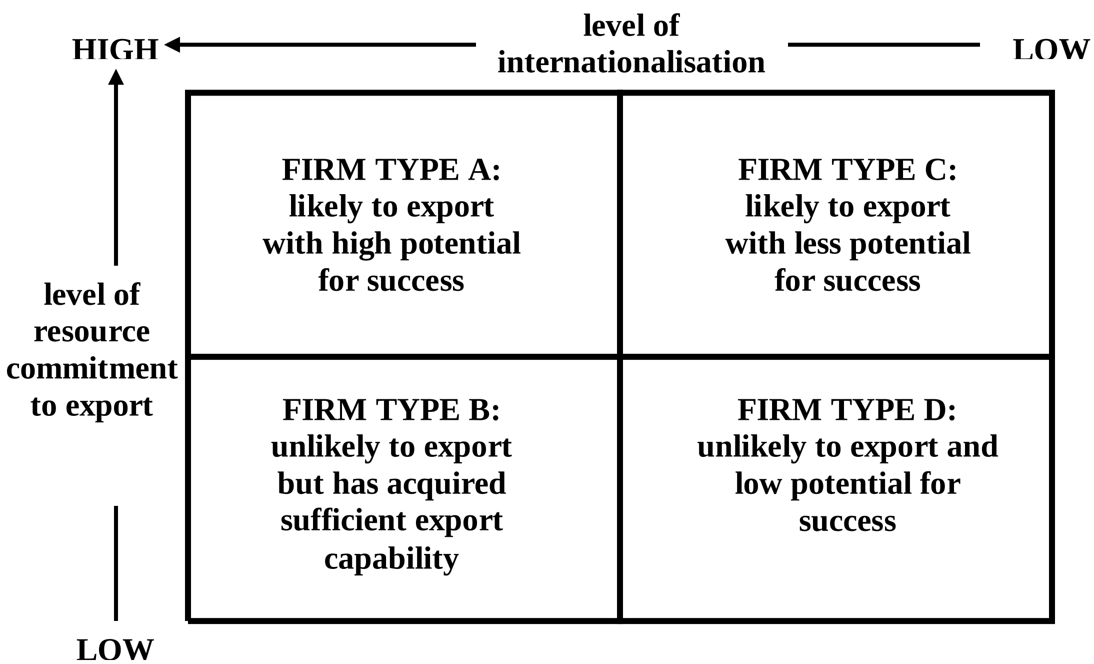
6. Conclusion and practical implications

The pre-internationalisation perspective adopted here contributes to existing knowledge by providing a new perspective to research in firm internationalisation. Internationalisation has become an important strategy for firms, which at the most basic level, involves the use of external market-based modes of exchange such as exporting. The preference for an external market-based mode of entry among firms in recent decades has been highlighted in the literature (Liesch & Knight, 2001; Dhanaraj & Beamish, 2003). The concept of internationalisation readiness offers firms the ability to analyse their level of preparedness for an international commitment. In Australia for example, this research is highly relevant as one major cause for concern is the evidence shown in studies that the performance of Australian exporters has been generally poor and has not matched the average export development in the global market (Arcus, 1992; McKinsey & Co, 1993; Valos & Baker, 1996). The Internationalisation Readiness Index (IRI) has major public policy implications for the Australian government, for example, in assisting local firms in making their first export decision. Of course, complete reliance on a single tool such as this index to make an important decision such as the internationalisation one would be unwise. This index should be used as an indicator encouraging further analysis in accordance with the direction indicated by the components of Figure 5 below.

Figure 5 presents an export decision matrix encompassing the dimensions ‘level of internationalisation readiness’ and ‘level of resource commitment to export’. The matrix highlights four different types of firms that could emerge through the pre-internationalisation phase. This study hypothesises that a firm that starts exporting after achieving a high level of internationalisation readiness (firm type A) is more likely to have long-term success as compared to a firm that starts exporting to a foreign market when its level of internationalisation readiness is still relatively low (firm type C). It should be noted that firms could start to internationalise prior to achieving internationalisation readiness, as well as not internationalising despite having achieved internationalisation readiness. The export decision is influenced not only by a firm’s internationalisation readiness but also by its willingness to commit resources to a foreign market.

The use of the proposed internationalisation readiness index will allow firms classified under firm type B (already achieved internationalisation readiness but have yet to commence export operations) to be given greater attention as potential exporters. Type C firms, on the other hand, should exercise extreme caution in respect to their export intentions. Type A firms should be satisfied they are well placed to succeed in the export strategy, and Type D firms should recognise that the benefits of internationalisation are still not within their reach.

Figure 5: Export Decision Matrix



This paper identifies important theoretical considerations by expanding on a much-neglected area in behavioural internationalisation research. The pre-internationalisation framework introduced in this study aims to improve on the traditional stages models by highlighting the point of internationalisation readiness inception that occurs before the commencement of the internationalisation process. Within the pre-internationalisation phase, firms experience a learning process that is influential towards an initial internationalisation decision. The proposed internationalisation readiness index is a behavioural measure that sets out to quantify a firm's readiness for an export commencement decision and has much to offer practically as a public policy tool to be used by public agencies charged with export and internationalisation promotion.

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